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ABSTRACT

The theoretical generalization that no lexical material can occur between a Wh-element and a verb in any clause in Basque is challenged, and it is argued that case is not assigned structurally in the Basque language. The account demonstrates how a number of well documented properties of Basque may combine to produce this grammatical result, and an attempt to capture the significance of several specific syntactic relationships (e.g., theta-role discharging, case assignment, and focalization) for the proper definition of barriers is presented. (MSE)

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Barriers on Basque WH-Movement

by

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BARRIERS ON BASQUE WH-MOVEMENT

Itziar Laka (MIT) and Juan Uriagereka (UConn)

1. Consider the standard claim in the literature on Basque that lexical material cannot intervene between a Wh-element and a verb in any clause (Altube (1929) and successive studies). The theoretical status of this descriptive generalization is unclear. For one thing, the ungrammaticality of (1b) and the ungrammaticality of (1d) seem to have a different cause: [1]

(1) a. Zuk [zer [pro t_2 edango duzu]]
$_1$ CP $_2$ IP $_1$
You-ERG what-ABS drink aux-you-it
'What will you drink?'
b. * [Zer [zuk t edango duzu]]
c. Ardoa [Nork [t pro edango du]]
$_1$ CP $_2$ IP $_2$ $_1$
Wine-ABS who-ERG drink it-aux-he
'Who will drink wine?'
d. * [Nork [t ardoa edango du]]

In particular, the generalization above can be split into two different questions: (a) why is it that no lexical material can intervene between the Wh-element in the Spec of Comp and its trace, as shown in (1a-b); and (b) why is it that no lexical material can intervene between the Wh-trace in an A-position and the verb, as shown in (1c-d).

2. Consider also the fact, illustrated in (2), that extraction from NPs in Basque is barred (Goenaga (1984)):

(2) a. * Nori zuk t buruzko istorioak entzun dituzu
Who-DAT you-ERG about stories-ABS heard them-have-you
('Who have you heard stories about?
b. * Noren zuk t istorioak entzun dituzu
Who-GEN you-ERG stories-ABS heard them-have-you
('Who have you heard stories of?')

We want to argue that the facts above have to do with Case in Basque not being assigned structurally (see Levin (1983)), as is shown in (3): [2]

We appreciate the comments of Andy Barss, Ken Hale, Kyle Johnson, Charlie Jones, Richard Kayne, Tony Kroch, Howard Lasnik, Paul Meyer, Mats Rooth, and Pello Salaburu.

(3) a. gizonak amaginarreba maite du
man-the-ERG mother-in-law-ABS love Aux
'the man loves his mother in law'
b. Gizona bere buruari mintzatu zaio
man-the-ABS his head-DAT talk Aux
'the man has talked to himself'
c. Gizonak bere buruari burla egin dio
man-the-ERG his head fun---make Aux
'the man has made fun of himself'

Observe how arguments in different A-positions can receive the same Case, signaled by a post-position Case marker.[3]

Chomsky (1986:22) speculates that (structural) Case marking plays the same role as direct theta-marking in the theory of government. Let's suppose that this idea is correct in some form, allowing in particular for (structural) Case assignment to be an integral part of the definition of L(exical)-marking. Suppose for concreteness that A is L-marked by B only if A is structurally Case marked by B. Assuming Levin's hypothesis about Case in Basque, arguments in Basque are not L-marked according to the characterization suggested above. Maximal projections which are not L-marked can be barriers, details aside.[4] It is thus reasonable to assume that the impossibility for extraction in (2) has to do with arguments in Basque being barriers for anything within them (we'll return to this).

3. It has been observed that Wh-movement and focalization involve very similar contexts (see De Rijk (1978) and references). Focalization also requires adjacency between the verb and the focalized phrases, as (4) shows:

(4) a. Jonek ardoa edaten du
Jon-ERG wine-ABS come Aux
'Jon drinks wine'
b. Ardoa, JONEK edaten du
c. * JONEK ardoa edaten du

Yet, focalization and Wh-movement differ (syntactically) in several contexts. For instance, De Rijk (1978) has observed that, whereas multiple questions are possible in Basque, multiple focalization is not.[5] Also, Rebuschi (1984) has argued that long distance focalization is not allowed, whereas long distance Wh-movement clearly is.[6] However, it does seem to be the case that Wh-movement implies focalization. For instance, long distance Wh-movement is not possible when there is a focalized phrase in the lower clause:

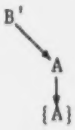
(5) * Nork esan duzu t KANUTOA lapurtu digula
Who-ERG say Aux joint-the-ABS steal Aux-Comp
('Who do you say has stolen OUR JOINT?')

This suggests that only focalized phrases may undergo Wh-movement in Basque. Multiple focalization being impossible, there cannot be a focalized phrase and a Wh-moved phrase in the same structure if, by hypothesis, the latter needs to be focalized as well. We will show the significance of this momentarily.

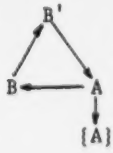
4. Let's assume that the following process takes place in canonical instances of head-complement relations: the argument assigns its index to the functor, hence discharging a theta-role in this functor, and the functor in return assigns structural Case to the argument, making it visible.[7] The syntactic operations at play seem to be (a) one between a category A and a category B, whose value is a projection B' of B (where a theta-role has been discharged); and (b) one between B' and A, whose value is a visible argument [A]. Graphically:

(6) a. A → B → B' b. B' → A → [A]

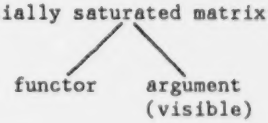
a'.

b'. 

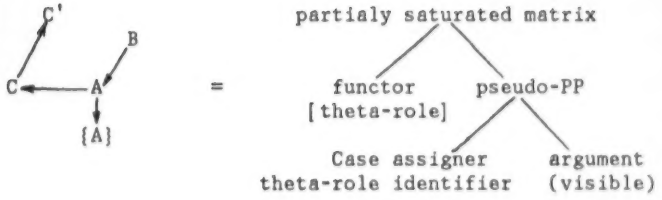
The disposition of the representations in (a') and (b') is familiar, especially when we put them together:

(7) 

= partially saturated matrix



We want to argue that the process above is not present in Basque, which seems plausible if structural Case assignment is missing. For the licensing of Basque arguments, a Case marker postposition is needed, which suggests that the operations at play there are: (a) one between a category A and a category C, whose value is a projection C' of C (where a theta-role has been discharged); and (b) one between a category B and A, whose value is a visible argument. Graphically:

(8) 

Now suppose that we characterize barrierhood in terms of di(rected)graphs like the ones just shown,[8] rather than by a definition such as L-marking. Consider in particular the graph theoretic notion strong connectedness as defined in (10):

(9) A path in a digraph is an alternating sequence $v_1, a_1, v_2, a_2, v_3, \ldots, v_{n-1}, a_{n-1}, v_n$ of distinct vertices and arcs, such that arc $a_i = (v_i, v_{i+1})$, for $i = 1, 2, \ldots, n-1$

(10) A digraph D is strongly connected if for every two distinct vertices u and v of D, there exist u-v and v-u paths in D

Intuitively, we want for A in (7) or (8) not to be a barrier if the subgraph integrating A and the element where it discharges a theta-role is strongly connected, as in (7). But we want for A to be a barrier if the subgraph is not strongly connected, as in (9).

A way of incorporating this idea into the theory of Government may be as in (11):[9]

(11) A (properly) governs B only if A and B are strongly connected

Let it be the case that Wh-phrases in Comp and IP, and Infl and VP are somehow strongly connected.[10] The consequence of some version of (11) may be, assuming that Basque verbs are incapable of determining a strongly connected digraph like (7), that a trace in an A-position will not be governed by anything, which would literally mean that Wh-movement should always constitute an ECP violation in this language. Here is where focalization may come to our rescue.

Assuming that the issue for extraction domains is strong connectedness, what is relevant is to get a mapping going both from the head to the subordinate and vice-versa. The mapping from the subordinate to the head is always ensured by theta-role discharging. The mapping from the head to the subordinate is straightforward in languages with structural Case assignment, but

is harder to get in languages like Basque. Focalization, then, would be essentially an alternative for structural Case assignment with respect to getting a strongly connected digraph.

Focalization in Basque could be basically as in English, involving, say, the assignment of a feature F to an argument, apparently by a verbal element. A parameter should then be invoked to determine whether or not F assignment is under adjacency. In Basque, Hungarian, etc., the option requiring adjacency seems rather straightforward.[11] Assuming that adjacency is string adjacency, and that pro is the empty string, intervening elements don't count so long as they are pro. (We'll return to this idea.) Thus (12) is well-formed:

(12) Komikia ZEUK pro irakurri duzu
Comic book-the-ABS YOU-ERG read aux
'YOU have read the comic book'

The pair (komikia, pro), we will assume is an instance of left dislocation.[12]

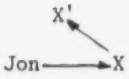
Notice that we have accounted for (b) in sec. 1: there is no material between a Wh-trace and the verb because, in Basque, focalization is under adjacency with the verb. Notice that this predicts extraction from an NP to be impossible: focalization <u>inside</u> the NP cannot take place, Basque being head last (the head noun always intervenes between its complement and the verb).

5. But we still have to make sure that the part of the digraph that goes between the antecedent and the subgraph we have just connected by focalization is also strongly connected. Recall we are assuming that the Comp subgraph is somehow connected and so is the interface Infl/VP. The real issue is then the fragments of the digraph where arguments are hooked up to the verbal projection.

Suppose that pro has to be controlled and, further, that A can control B only if A is <u>above</u> the NP/S where B is.[13] Suppose also that pro receives its referential index via control, and that an argument is visible only if it gets this index. Finally, assume that invisible arguments trigger the <u>identity map</u> for syntactic relations:[14]

(13) For C the set of categories,
$id_C = C \longrightarrow C,\ c \vdash\!\!\rightarrow c$

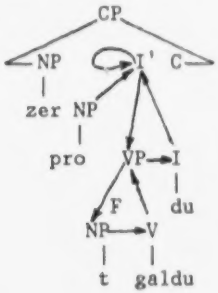
In these circumstances, whenever we have an operation involving pro, the arc between the other term of the operation and the result is a loop, since the two are identical, the same vertex:[15]

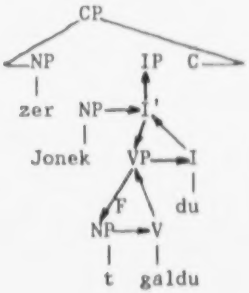
(14) a. 

b.

Assuming this device, we have a way of connecting strongly, say, an object Wh-trace and its antecedent if we make sure that all other intervening material is pro. For instance, as in (15a)--cf. the ungrammatical (15b)

(15) Zer pro t galdu du

a. 

b. 

Bear in mind, though, that for this type of approach to the ECP to work, gamma assignment (in the sense of Lasnik and Saito (1984))[16] must be successive cyclic. That is, pro lacks its referential index (and hence is invisible) only when the representation at stake is its own S-cycle. It is at this point that the trace may be assigned the feature +gamma, if it is the case that the digraph between the antecedent and the gap is strongly connected. If gamma were assigned at the level of the matrix clause, where pro must obviously get a referential index, there would be no way of avoiding an ECP violation with the devices just discussed.

We have now answered (a) in sec. 1: no overt element appears between the Wh-trace and the operator, since only controllable (empty) arguments do not break the connections needed for gamma assignment.

6. To summarize, we have accounted for the descriptive generalization in (1). We have divided it into two theory-internal questions whose answers reduce to an ECP issue, given our characterization of government. Our account tries to relate in a significant way a number of well documented properties of Basque, showing how they conspire to get the desired results. It also tries to capture the significance of syntactic relations of the sort of theta-role discharging, Case assignment, and focalization, for the proper definition of barriers. The latter may be derivative if we assume a graph theory.

FOOTNOTES

[1] Basque is uncontroversially head-last and arguably spec-first. The latter claim depends on the assumption in Abney (1986) and references that determiners are heads--they appear to the right of nouns in Basque. Comp appears to the right in Basque, as expected, but if we assume the specifier of Comp is to the left, and movement is to this site (as in Chomsky (1986)), then the fact that Wh-movement is to the left in Basque isn't surprising (see Koopman (1984) for a similar proposal for some Kru languages). Notice also that "displaced" intervening arguments (which we'll argue below are binding pro) are expanded in some pre-CP position, perhaps the TOP position in Chomsky (1978).

[2] Levin's argument is quite persuasive. We won't have space to repeat it in detail, but consider just one of the cases she discusses:

(i) a. Ez du gizonak ikusi ikaslea
Not aux the man-ERG see the student-ABS
'The man didn't see the student'

b. Ez du gizonak ikusi ikaslerik
Not aux the man-ERG see student-PART
'The man didn't see any student'

c. * Ez du gizonik ikusi liburua
Not aux the man-PART see the book-ABS
'Not a man saw the book'

d. Ez da gizona etorri
Not aux the man-ABS come
The man didn't come

e. Ez da gizonik etorri
Not aux the man-PART come
No men came

(ia-b) show that partitive case can be associated to D-structure objects, which receive absolutive case. (ic) shows that partitive case cannot be associated to D-structure subjects, which receive ergative case. Interestingly, (id-e) show that partitive <u>can</u> be associated to subjects of unaccusative verbs, D-structure objects in Levin's hypothesis. An interesting issue related to this hypothesis is whether or not D-structure objects move to subject position in S-structure. (The examples in (3) seem to suggest that they do, since the subject in (3b) is licensing a dative anaphor; however, the case of <u>mintzatu</u> 'talk' is rather exceptional in being able to license this anaphor.) If the arguments in question do not raise, there might be an issue as to how the Extended Projection Principle is satisfied for Basque, if such a principle demands a structurally realized subject position. If they do, what is hard to see what kind of movement this is, since it is not to a position where Case is assigned or from a position where Case is not assigned (but maybe this is the right way to go for NP-movement, the usual stipulations being derivable independently). We'll leave this matter aside here.

[3] That this case marker is a postposition can be seen in the light of (i), where this element appears after the determiner in the NP:

(i) liburuaren azal gorria
book-det/sg-GEN cover red-det/sg-ABS
the red cover of the book

Richard Kayne suggests that the proper way of treating Case in a language like Basque is by assuming that the case marker post-postion is what is assigning Case. He further suggests that we should distinguish arguments with inherent Case (perhaps the absolutive case in Basque is an instance of this) from arguments getting Case from a case marker. We believe this distinction to be essentially right, but we won't treat the absolutive case differently from others in Basque for the sake of simplicity. A priori, though, there is another way of looking at the issue of Case assignment in Basque: that the agreement markers in Infl are directly responsible for this, much in the same way as subject-verb agreement is responsible for nominative Case assignment elsewhere (see Hualde (1986) for a treatment along these lines). If this were true, it would be an argument <u>against</u> a hypothesis which does not treat Case in Basque as structural. This account, however, finds a major problem in cases like (ii):

(ii) Aitak amari gona gorria erosteak poztuko gintuzke
Father-ERG mother-DAT skirt red-a buy-ERG please us-aux-it
'It would make us happy if the father would buy the mother a red skirt'

In (ii), there is no auxiliary for <u>erosteak</u> 'buy', and hence its arguments do not agree with anything. In fact, this is not just a low-level phenomenon, as (iii) shows:

(iii) a. * pro pro pro erosteak poztuko gintuzke
buy-ERG happy-make us-aux-it
('It would make us happy if (he) would buy (her) (it)')

b. pro pro pro erosiko balio poztuko ginateke
buy-ERG it-aux-her-he happy-make us-aux-it
'we would be happy if (he) would buy (her) (it)'

We can see in (iiia) that pro isn't licensed in constructions like the ones illustrated in (ii), whereas it is in an identical, tensed clause, as in (iiib). These facts give more plausibility to Kayne's suggestion, since we can never find an NP missing a case post-position--thus the ungrammaticality of (iv):

(iv) * Aita ama gona gorria erosteak poztuko gintuzke
Father mother skirt red-the buy-ERG happy-make us-aux-it

[4] (i) A is a BC for B iff A is not L-marked and A dominates B
(ii) A is a barrier for B iff (a) or (b)
(a) A immediately dominates C, C a BC for B
(b) A is a BC for B, A different from IP (Chomsky 1986: 14)

[5] Thus, (the perfectly sensible) (ib) is not a possible answer to (ia):

(i) a. Gamma-irazketa adjuntuei D-egituran ezartzen zaie
'Does Gamma-filtering apply to adjuncts at D-structure?'

b. * Ez, GAMMA-MARKATZEA ARGUMENTUEI S-EGITURAN ezartzen zaie
('No, GAMMA-MARKING applies to ARGUMENTS at S-STRUCTURE')

Yet, (ii) is perfect:

(ii) Nork [t pro maite du] nor
Who-ERG love aux who-ABS
'Who loves (him/her) who'

Notice, however, the strategy employed in (ii): only one Wh-phrase is in Comp; the other one is right-dislocated. We won't go here into multiple Wh-questions. On the other hand, the requirement of one focus per clause is derivable from two facts: that only D-structure positions adjacent to the verb are focalized in Basque (see fn. 6), and that Basque is an SOV language (De Rijk (1969)).

[6] This claim has been challenged in various places (see for instance Salaburu (1986)). However, there is a sense in which Rebuschi seems to be right. Strict focalization doesn't involve any special presupposition (thanks to Mats Rooth for this observation). What we may call <u>emphasis</u>, something which is hard to tease apart from focalization, does involve a presupposition. Consider the contrasts in (i):

(i) a. Lekukoek diotenez, PATXIK ez zuen labaina erabili;
'As the witnesses say, PATXI hasn't used the knife;
izan ere INORK ez zuela erabili diote
in fact, they say that NOBODY has'

b. PATXIK diote lekukoek ez zuela labaina erabili;
'PATXI, the witnesses say hasn't used the knife;
izan ere INORK ez zuela erabili diote
in fact, they say that NOBODY has'

(ia) is felicitous, but in (ib) there exists a contradiction: that someone has used the knife is presupposed. These contrasts appear when we compare long and short distance focalization or, in our terms, (strict) focalization and emphasis. This state of affairs suggests that focalization in Basque takes place in a D-structure position (under string adjacency with the verb), much like in other languages.

[7] We are following Higginbotham (1985) rather freely.

[8] A <u>digraph</u> D is a finite non-empty set V of <u>vertices</u>, with an irreflexive relation R on V. We call an <u>arc</u> each of the ordered pairs in R, and we denote by E the set of arcs in D.

[9] This proposal is similar in spirit to the Connectedness theory of Kayne (1984) and others. However, in that theory phrase markers of some form or another are taken as primitives, or at least logically prior, which is not the case here, where only licensing relations are primitive. This provided, we don't need any special way of characterizing connectedness for syntactic relations, but simply assume a graph theory, defined elsewhere. For us, the (syntactic) connectedness relation is nothing but the symmetric transitive closure of the licensing relation, understood as a cover-term for theta role discharging, Case assignment, etc.

[10] The connection between the Comp-complex and IP must obviously have to do with whatever relation is involved in licensing moved Wh-phrases. As for the connection between Infl and VP, similar issues arise, this time related to the licensing of VP and the role it discharges in Infl, perhaps the <u>event</u> of Higginbotham

(1985). These issues are orthogonal to our analysis.

[11] See Horvath (1981) for a treatment of focalization in Hungarian. We don't mean to imply that focalization in Basque and in Hungarian are to be treated on a par. If Horvath is right, the latter involves a special focus position. Crucially, we are assuming that there is no such thing as a special position where Basque phrases are focalized, but rather that this is their D-structure position (see fn. 6). The adjacency requirement, thus, might be of a different sort for each of these languages. See Uriagereka (1986) for an attempt to derive this requirement for Basque.

[12] This construction, for instance, doesn't seem to obey subjacency requirements:

(i) Komikia, jakin nahi nuke irakurri duzuen
'The comic-book, I wonder whether you have read'

[13] This is the assumption in most theories of Control. An exception to this is Huang (1984), where Infl controls pro and both are inside IP. A way of re-interpreting Huang's theory, though, is to assume that the controller of pro is not Infl, but an empty topic (which Huang introduces for independent reasons) binding pro. In Basque this would generalize to cases where a topic which is not empty binds pro, as in the example in (12).

[14] This needs clarification. Suppose we look at all syntactic categories as being two-fold: they can act as arguments, but they can also act as operators. Thus, for instance, A in (6a) is an operator in the sense that it triggers the mapping from B to B'. In this sense, pro in the cases in question operates over V. But since pro at the relevant level has no index, the operation in question is vacuous, so to speak.

[15] A digraph as defined on fn. 8 is based on an irreflexive relation. But in the situation in the text the relation is clearly not irreflexive. In this case, the ordered pair (u, u), u a vertex, is referred to as a loop.

[16] Lasnik and Saito assume that a trace is properly governed if it receives a feature gamma. They propose a filter *[-gamma] to throw out ECP violations.

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